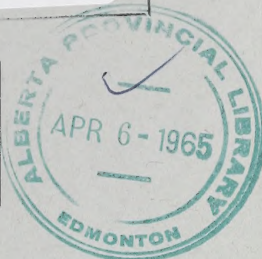


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ANNUAL REPORT
OF
THE MINES DIVISION
OF THE
Department of Mines and Minerals
OF THE
PROVINCE OF ALBERTA

1964

Edmonton:
Printed by L. S. Wall, Queen's Printer



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Edmonton, Alberta

February 10th, 1965.

TO THE HONOURABLE A. RUSSELL PATRICK,

Minister of Mines and Minerals

Sir:

I have the honour to submit the Annual Report of the Mines Division of the Department of Mines and Minerals for the year ending December 31st, 1964.

Respectfully submitted,

J. A. DUTTON,

Director of Mines.

ANNUAL REPORT OF THE MINES DIVISION FOR THE YEAR ENDING DECEMBER 31st, 1964

The output of coal from the mines in the province was 2,971,133 tons with a valuation of \$11,189,087. This shows an increase of 681,190 tons and an increase of \$1,322,125, compared with the previous year.

There were 35,856 tons of coal used to make 38,230 tons of briquettes valued at \$367,326. This show an increase of 872 tons of briquettes made and a decrease in valuation of \$5,501 compared with the previous year. There were 16,170 tons of briquettes and 6,412 tons of coal used to make 19,971 tons of char, valued at \$242,457.

In addition to the above tonnage, there were 965 tons of coal reported as mined by the Blackfoot Indians, at Gleichen, for their own use.

The disposition of coal for 1964 and comparison with the previous year follows:

	1964	1963
Sold for consumption in Alberta	1,620,893	1,073,606
Sold for consumption in other provinces	696,098	766,965
Sold to the United States	14,805	5,583
Sold to Japan	612,544	410,558
Sold to railway companies	14,451	16,001
Used making briquettes	35,856	35,013
Used making char	6,412	843
Used under colliery boilers	5,203	4,432
Used by colliery railways	—	120
Put to stock	147,172	152,252
Put to waste	14,866	7,869

The above tonnages include lifted from stock and waste heaps which are not included in the total output.

There were 50 subsurface and strip mines which produced coal during the year, employing 1,188 persons who worked 285,039 shifts. This shows a decrease of 5 mines, an increase of 37 persons, and an increase of 30,368 shifts, compared with the previous year. There were 28 strip mines employing 271 persons who worked 67,830 shifts and produced 1,910,683 tons. This shows a decrease of 5 strip mines, an increase of 18 persons, an increase of 5,383 shifts and an increase of 581,716 tons from stripping operations, compared with the previous year.

The number of mines using electrical power during the year was 39. The following table shows the comparison of purchased electrical power in K.W. hrs. by mines for the past ten years.

1955	44,932,173	1960	26,231,225
1956	42,228,910	1961	21,694,596
1957	29,110,288	1962	20,436,598
1958	20,574,436	1963	22,062,185
1959	25,159,068	1964	21,930,976

The total horsepower of electrical motors in use was 30,988 h.p. an increase of 19 h.p., in comparison with 1963. The following table shows a breakdown of horsepower in use, both above and below ground.

Above Ground		Below Ground	
Duty	H.P.	Duty	H.P.
Hoisting	3,298	Pumping	598
Ventilation	680	Ventilation	168
Air Compressing	298	Haulage	951
Tipple & Coal Preparation Plants	8,330	Cutting & Loading	3,046
Miscellaneous	13,146	Miscellaneous	473
Total	25,752	Total	5,236

The figures below show the trend in the use of certain types of electrical equipment underground in mines for the past ten years.

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Cutting Machines	138	141	115	98	73	71	66	56	46	46
Battery Locomotives ..	42	43	36	31	26	22	25	27	27	22
Trolley Locomotives ..	23	24	22	21	18	8	10	9	9	7
Conveyors	45	55	46	45	38	30	33	31	30	30
Coal Drills	90	93	86	74	55	56	59	50	53	45
Face Loaders	10	9	12	13	13	15	17	16	16	9

Twenty-three quarries produced 1,800,586 tons of shale, clay, limestone, building stone, bentonite and oil sands, an increase of 80,808 tons compared with the previous year.

Three hundred and thirty inspections were made under the terms of The Coal Mines Regulation Act, 302 in connection with The Workmen's Compensation Board Regulations and 71 under The Quarries Regulation Act.

In addition to the above 92 abandoned mining locations were inspected. Remedial work was required and completed at 28 locations. Sixteen inspections were made for the cancellation of mining leases.

The total number of accidents in coal mines reported was 24. The number of fatal accidents was 1 compared with 1 in the previous year. This equals 0.34 fatals per million tons of coal produced.

There was 1 accident reported in quarries.

All complaints made to the Division were investigated.

There were no prosecutions under The Coal Mines Regulation Act.

Written examinations under The Coal Mines Regulation Act were held on June 2nd, 3rd and 4th at Edmonton and Calgary with successful candidates as follows: 1 examiner, 1 second class mine electrician, 2 managers (strip mine) 5 foremen (strip mine) and 1 blaster (strip mine).

Written examinations under The Quarries Regulation Act were held on June 2nd, at Edmonton and Calgary, with successful candidates as follows: 3 foremen and 1 blasters Certificates were issued to successful candidates on oral examinations.

One examination was held for miners' certificate and 20 certificates were issued to successful candidates. Eleven substitute miners' certificates, 41 miners' provisional certificates and 56 miners' permits were granted, making a total of 128 certificates issued which is an increase of 59 for the year.

There were no staff changes in the Mines Division during the year.

THE MINES DIVISION

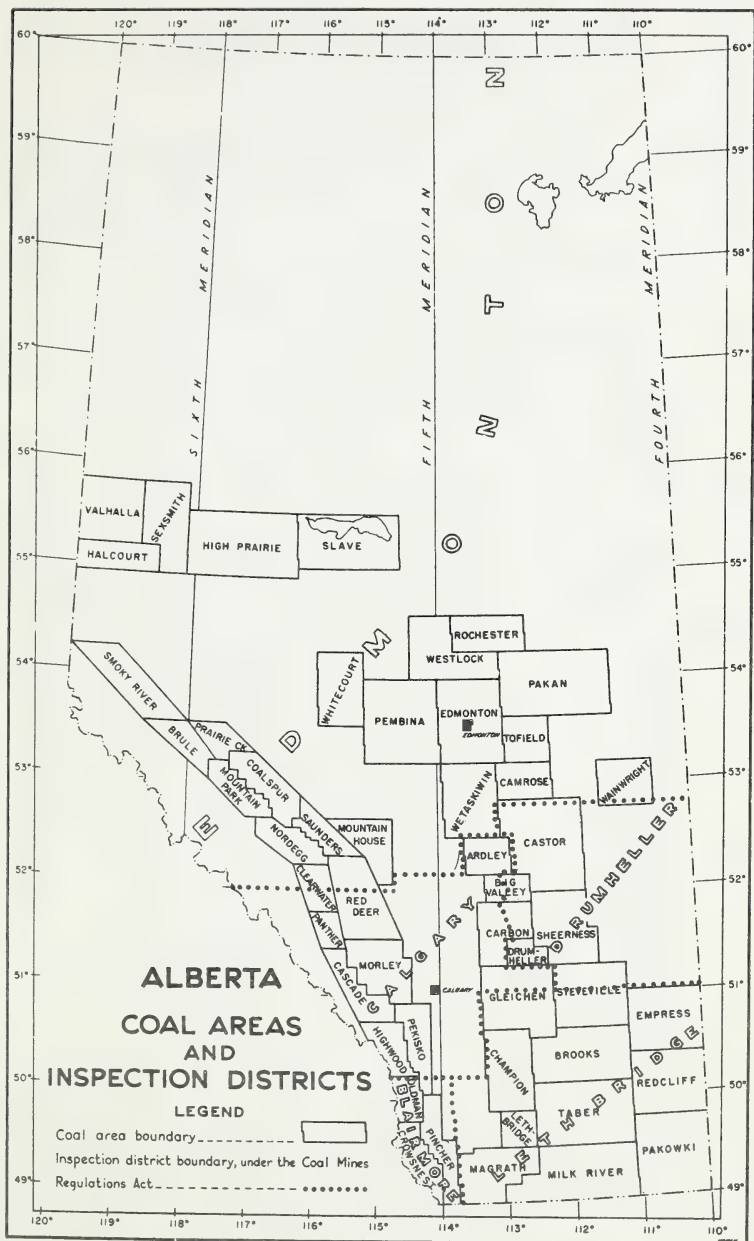
NUMBER OF MINES PRODUCING, OPENED AND ABANDONED
DURING THE YEAR ACCORDING TO AREAS AND KIND OF COAL

Director of Mines - J.A. Dutton, Natural Resources Building,
Edmonton, Alberta. Telephone 229-3802.

Assistant Director of Mines - J.D.B. Brown, Natural Resources
Building, Edmonton, Alberta. Telephone 229-3803.

Electrical Inspector of Mines - J.S. Watson, Natural Resources
Building, Edmonton, Alberta. Telephone 229-3806.

Inspection District	Area	Area Number	Character of Coal	No. of Mines producing during the year	No. of Mines opened during the year	No. of Mines abandoned during the year	Name and Address of District Inspectors of Mines
Calgary	Ardley	1	Sub-bituminous	3	..	..	J.J. Kubin,
	Carbon	6	Sub-bituminous	5	1	..	806-Centre Street South,
	Cascade	7	Bituminous	1	..	..	Calgary, Alta.
	Gleichen	17	Sub-bituminous	1	..	1	Tel. 269-6687
Drumheller	Castor	8	Sub-bituminous	4	..	1	R. Shaw,
	Drumheller	14	Sub-bituminous	7	1	1	Provincial Bldg.,
	Sheerness	38	Sub-bituminous	1	..	..	Centre St. & 2nd Ave., Drumheller, Alta. Tel. 823-2413
Edmonton	Camrose	5	Sub-bituminous	2	..	..	P. Melson,
	Coalspur	11	Bituminous	1	..	..	Room 317,
	Edmonton	15	Sub-bituminous	5	..	..	Natural Resources Bldg.,
	Halcourt	18	Sub-bituminous	..	..	1	Edmonton, Alta.
	Pembina	31	Sub-bituminous	3	..	..	Tel. 229-3805
	Tofield	42	Sub-bituminous	3	..	..
	Westlock	45	Sub-bituminous	2	..	..
Lethbridge	Wetaskiwin	46	Sub-bituminous	1	..	..
	Brooks	3	Sub-bituminous	2	..	..	I.N. Potter,
	Champion	9	Sub-bituminous	2	..	..	Administration Bldg.,
	Crownsnest	12-13	Bituminous	4	1	1	909 - 3rd Ave. North,
	Lethbridge	20	Bituminous	1	..	1	Lethbridge, Alta.
	Redcliff	34	Sub-bituminous	1	..	..	Tel 328-4471
	Taber	41	Sub-bituminous	1	..	..
Total				50	3	6	



THE MINES DIVISION

ESTIMATED ALBERTA COAL RESERVES

As at February, 1945

Name of Area	Total Area sq. mi.	Area underlain by coal sq. mi.	Thick- ness of coal feet	Tons per acre foot	Tonnage millions of tons	Totals millions of tons
KOOTENAY FORMATION						
Smoky River.....	1,490	55	50	1,860	3,300	
Brule.....	715	36	23	1,860	1,000	
Mountain Park.....	690	108	40	1,875	5,200	
Nordegg.....	835	46	27	1,840	1,500	
Clearwater.....	645	18	25	1,860	500	
Panther.....	410	11	25	1,860	300	
Cascade.....	870	100	32	1,880	3,900	
Highwood.....	745	90	60	1,860	6,400	
Oldman.....	515	72	30	1,800	2,500	
Crowsnest.....	840	140	30	1,900	5,100	29,700
BELLY RIVER (including Edmonton)						
Halcourt.....	970	72	3	1,800	300	
Prairie Creek.....	565	25	15	1,820	400	
Coalspur.....	1,125	100	30	1,900	3,600	
Saunders.....	745	72	20	1,840	1,700	
Morley.....	1,480	80	10	1,800	900	
Pekisko.....	945	75	15	1,820	1,300	
Pincher.....	955	36	7	1,860	300	
Sexsmith.....	1,570	2	5	1,800	10	
Valhalla.....	1,765	5	5	1,800	30	
Red Deer.....	1,625	20	20	1,820	500	
Westlock.....	1,705	5	6	1,800	40	9,080
BELLY RIVER						
Magrath.....	1,550	72	6	1,870	500	
Lethbridge.....	575	150	4	1,860	700	
Milk River.....	2,735	80	6	1,850	600	
Pakowki.....	2,590	41	6	1,800	300	
Taber.....	2,770	80	3	1,860	300	
Redcliff.....	2,015	1	4	1,780	5	
Brooks.....	2,270	30	4	1,780	100	
Steveville.....	2,015	3	3	1,780	10	
Empress.....	2,015	1	3	1,780	3	
Wainwright.....	1,080	2	5	1,780	10	
Pakan.....	3,025	2	5	1,780	10	
Rochester.....	1,150	1	6	1,800	7	
Slave.....	2,375	2	4	1,800	9	
High Prairie.....	3,020	2	4	1,800	9	2,563
EDMONTON FORMATION						
Pembina.....	2,630	50	25	1,870	1,500	
Edmonton.....	2,270	50	12	1,790	700	
Tofield.....	900	20	15	1,760	300	
Camrose.....	865	10	10	1,760	100	
Castor.....	2,880	20	15	1,770	300	
Ardley.....	720	20	10	1,820	200	
Big Valley.....	540	7	6	1,860	50	
Carbon.....	1,190	25	10	1,850	300	
Sheerness.....	1,765	20	10	1,800	200	
Drumheller.....	430	75	15	1,820	1,300	
Gleichen.....	2,125	10	5	1,780	60	
Champion.....	1,620	10	5	1,850	60	
Wetaskiwin.....	1,730	10	6	1,780	70	
Whitecourt.....	1,440	10	6	1,850	70	
Mountain House.....	940	2	4	1,800	9	5,219
Grand Total.....	72,435	1,974	...	...	...	46,562

Extract of Page D-3 and D-4 of the Alberta Submission to the Royal Commission on the Coal Industry of Canada.

PARTICULARS WITH REFERENCE TO THE COAL MINING INDUSTRY IN THE
PROVINCE OF ALBERTA DURING THE YEAR ENDING DECEMBER 31, 1964.

SUMMARY OF STATISTICS

Number of tons of coal produced.....	2,971,133
Total valuation of coal produced.....	\$ 11,189,087
Number of tons of briquettes made.....	38,230
Total valuation of briquettes made.....	\$ 367,326
Number of tons of char made.....	19,971
Total valuation of char made.....	\$ 242,457
Number of mines in operation.....	50
Number of mines opened.....	3
Number of mines abandoned.....	6
10 mines or 20.00% of the total operating produced	0.08% of the output..
9 mines or 18.00% of the total operating produced	0.69% of the output..
7 mines or 14.00% of the total operating produced	1.65% of the output..
15 mines or 30.00% of the total operating produced	8.93% of the output..
2 mines or 4.00% of the total operating produced	5.35% of the output..
2 mines or 4.00% of the total operating produced	11.93% of the output..
2 mines or 4.00% of the total operating produced	15.79% of the output..
3 mines or 6.00% of the total operating produced	55.58% of the output..
Average number of persons employed.....	1,188
Average number of persons employed in under ground mining.....	917
Average number of persons employed in strip mining.....	271
Average number of days worked.....	148
Total number of manshifts.....	285,039
Number of separate accidents causing loss of life.....	1
Number of fatal accidents below ground.....	1
Number of serious accidents below ground.....	3
Number of slight accidents above ground.....	6
Number of slight accidents below ground.....	14
Total purchased electric power (kilowatt hours).....	21,930,976
Number of trade name certificates issued.....	5
Number of provisional second class certificates issued.....	12
Number of provisional third class certificates issued.....	8
Number of provisional foremen's certificates issued.....	17
Number of provisional miners' certificates issued.....	41
Number of miners' permits issued.....	56
Number of miners' certificates issued.....	20
Number of third class certificates issued.....	1
Number of second class mine electrician's certificates issued.....	1
Number of strip mine manager's certificates issued.....	2
Number of strip mine foremen's certificates issued.....	5
Number of strip mine blaster's certificates issued.....	1
Number of first class certificates issued up to Dec. 31/64.....	313
Number of second class certificates issued up to Dec. 31/64.....	624
Number of third class certificates issued up to Dec. 31/64.....	1,862
Number of mine surveyors' certificates issued up to Dec. 31/64.....	251
Number of first class mine electricians' certificates issued up to Dec. 31/64.....	175
Number of second class mine electricians' certificates issued up to Dec. 31/64.....	139
Number of strip mine managers' certificates issued up to Dec. 31/64.....	169
Number of strip mine foremen's certificates issued up to Dec. 31/64.....	249
Number of strip mine blasters' certificates issued up to Dec. 31/64.....	26
Number of miners' certificates issued up to Dec. 31/64.....	21,034

PARTICULARS WITH REFERENCE TO QUARRIES IN THE
PROVINCE OF ALBERTA DURING THE YEAR ENDING DECEMBER 31, 1964.

SUMMARY OF STATISTICS

Number of tons of shale, clay and bentonite produced.....	528,600
Number of tons of limestone produced.....	1,145,013
Number of tons of building stone produced.....	773
Number of tons of oil-sands produced.....	126,200
Number of quarries in operation.....	23
Number of quarries opened.....	2
Number of quarries abandoned.....	3
Number of persons employed.....	132
Average number of days worked.....	101
Total number of manshifts.....	22,597
Number of serious accidents.....	1
Number of pounds of explosives used.....	83,877
Number of pounds of ammonia nitrate used.....	286,642
Number of detonators used.....	10,849
Number of shots fired.....	7,411
Number of primers used.....	10,067
Number of missed fire shots.....	3
Amount of prima cord used (feet).....	1,000
Number of provisional managers' certificates issued.....	2
Number of provisional foremen's certificates issued.....	13
Number of provisional blasters' certificates issued.....	1
Number of foremen's certificates issued.....	3
Number of blasters' certificates issued.....	1
Number of managers' certificates issued up to December 31st, 1964.....	20
Number of foremen's certificates issued up to December 31st, 1964.....	40
Number of blasters' certificates issued up to December 31st, 1964.....	62

ANNUAL PRODUCTION AND VALUATION OF COAL FROM MINES
IN THE PROVINCE OF ALBERTA
For the Years 1945 to 1964 Inclusive

Year	Output Tons	Valuation Dollars
1945.....	7,801,248	\$ 27,699,333
1946.....	8,824,455	33,197,261
1947.....	8,074,596	36,317,343
1948.....	8,111,013	41,875,044
1949.....	8,616,983	44,541,538
1950.....	8,118,206	41,631,579
1951.....	7,661,276	41,000,953
1952.....	7,194,472	39,974,318
1953.....	5,917,423	32,158,435
1954.....	4,859,136	26,349,275
1955.....	4,456,578	23,486,399
1956.....	4,329,639	23,283,966
1957.....	3,155,354	17,287,229
1958.....	2,519,939	12,778,111
1959.....	2,549,517	12,892,747
1960.....	2,404,093	11,439,705
1961.....	2,027,826	10,471,217
1962.....	2,087,310	9,983,327
1963.....	2,289,943	9,866,962
1964.....	2,971,133	11,189,087

PER CAPITA PRODUCTION OF MINES IN THE PROVINCE
For the Years 1945 to 1964 Inclusive

Year	Gross Tons of coal mined	Total Average No. of men employed	Tons of Coal mined per man employed
1945.....	7,801,248	8,309	939
1946.....	8,824,455	8,583	1,028
1947.....	8,074,596	8,772	920
1948.....	8,111,013	8,865	915
1949.....	8,616,983	8,682	993
1950.....	8,118,206	7,999	1,015
1951.....	7,661,276	7,339	1,044
1952.....	7,194,472	6,936	1,037
1953.....	5,917,423	5,760	1,027
1954.....	4,859,136	4,719	1,030
1955.....	4,456,578	3,801	1,172
1956.....	4,329,639	3,443	1,258
1957.....	3,155,354	2,795	1,129
1958.....	2,519,939	2,021	1,247
1959.....	2,549,517	1,720	1,482
1960.....	2,404,093	1,729	1,390
1961.....	2,027,826	1,323	1,533
1962.....	2,087,310	1,281	1,629
1963.....	2,289,943	1,151	1,989
1964.....	2,971,133	1,188	2,501

THE MINES DIVISION

CLASSIFICATION OF OUTPUT DURING THE YEARS 1915 to 1964 INCLUSIVE

Year	Bituminous	Sub-bituminous	Coal used in Coke Production	Tons of Briquettes made	Tons of Coke made
1915.....	4,600,763	3,200,485	64,280	250,274	43,180
1916.....	5,389,596	3,434,859	64,878	275,646	43,206
1917.....	4,837,376	3,237,320	81,128	282,898	52,627
1918.....	4,920,796	3,190,217	78,795	321,574	45,718
1919.....	5,495,327	3,121,656	91,361	460,643	54,922
1920.....	4,793,020	3,395,186	23,079	409,895	16,637
1921.....	4,659,289	3,601,887	6,957	345,768	3,959
1922.....	4,378,622	2,815,850	3,474	661,862	574
1923.....	3,517,499	2,399,924	...	665,556	...
1924.....	2,402,185	2,456,951	...	635,501	...
1925.....	2,114,892	2,341,686	...	435,785	...
1926.....	2,064,723	2,264,916	...	525,202	...
1927.....	1,265,844	1,889,510	...	265,645	...
1928.....	834,256	1,695,683	...	128,512	...
1929.....	811,819	1,734,698	...	99,499	...
1930.....	863,517	1,540,576	2,352	44,111	1,216
1931.....	666,226	1,361,600	661	34,534	491
1932.....	590,139	1,497,171	...	28,631	40
1933.....	635,650	1,654,293	843	37,358	11,677
1934.....	866,221	2,104,912	6,112	38,230	19,971
			*		*
			*		*
			*		*
			*		*

* Char

Amount of Coal Sold During the Years 1915 to 1964, Inclusive for Consumption in:

Year	Railways	Alberta	B.C.	Sask.	Manitoba	Ontario	Quebec	U.S.A.	China and Japan	Total
1915.....	2,116,803	1,567,940	868,396	1,242,001	511,882	278,814	...	162,698	...	* 7,098,928
1916.....	2,893,207	1,608,296	982,413	1,449,002	658,733	348,137	...	137,271	37,865	* 8,136,694
1917.....	2,504,604	1,671,130	899,403	1,475,006	563,444	162,898	...	91,235	42,192	* 7,433,989
1918.....	2,312,273	1,593,429	945,700	1,413,283	625,009	202,520	58	84,495	200,947	7,377,914
1919.....	3,012,425	1,614,306	891,132	1,422,890	629,456	187,976	...	45,972	3,4475	7,617,652
1920.....	2,308,365	1,672,519	873,558	1,366,723	566,920	312,363	...	105,765	...	7,226,413
1921.....	2,443,326	1,427,114	898,533	1,322,162	492,737	182,753	...	80,270	44,317	6,991,212
1922.....	2,065,365	1,234,307	1,021,484	1,241,716	384,924	126,381	...	71,817	1,588	6,147,582
1923.....	1,625,783	1,045,482	859,385	1,034,594	274,758	73,117	...	47,119	...	4,960,238
1924.....	713,743	1,064,817	891,194	995,882	292,455	85,836	...	33,124	...	4,107,051
1925.....	431,639	1,080,379	932,764	893,377	293,719	90,727	...	32,941	...	3,755,546
1926.....	385,388	1,020,538	860,329	871,719	304,918	75,029	120	15,692	...	3,563,733
1927.....	152,693	876,395	672,327	680,297	247,480	68,379	165	46,079	10,745	2,784,760
1928.....	56,420	838,535	532,911	584,025	226,302	54,887	122	37,154	21,952	2,352,368
1929.....	39,122	874,622	437,118	549,663	239,503	52,828	80	33,455	124,719	2,351,110
1930.....	1,015	845,806	379,668	362,383	201,372	40,305	157	30,283	361,336	2,222,355
1931.....	51,128	791,631	321,909	232,848	159,744	35,466	115	18,066	343,720	1,954,627
1932.....	32,003	901,107	283,651	347,012	153,561	29,952	75	9,219	316,787	2,073,367
1933.....	16,001	1,073,606	262,433	343,634	131,471	29,309	118	5,583	410,558	2,272,713
1934.....	14,451	1,620,893	261,990	279,171	122,590	32,261	x 86	14,805	612,544	2,958,791

* NOTE: Included in the above totals are the following tonnages: x Includes 46 tons to N.W.T.

Ships Bunkers

1915.....	20,394
1946.....	21,770
1947.....	4,107

THE MINES DIVISION

Coal Produced by Years from 1960 to 1964

BITUMINOUS COAL FIELD

Areas	1960	1961	1962	1963	1964
Group 1:					
Cascade.....	210,061	230,058	217,050	215,269	240,505
Group 2:					
Crowsnest.....	533,350	352,665	300,983	360,268	554,783
Group 3:					
Coalspur.....	1,983	4,916	6,263	5,206	5,896
Halcourt.....	216	360	...	280	...
Lethbridge.....	117,907	78,227	65,843	54,627	65,037
Total.....	863,517	666,226	590,139	635,650	866,221

SUB-BITUMINOUS COAL FIELD

Group 4:					
Ardley.....	44,713	41,320	39,817	38,405	34,405
Brooks.....	10,201	8,660	7,652	6,633	6,942
Carbon.....	24,304	19,518	18,009	15,195	14,011
Champion.....	6,236	5,188	4,843	3,710	3,151
Drumheller.....	467,517	382,576	342,240	305,508	246,123
Edmonton.....	101,403	89,928	90,111	85,316	86,478
Gleichen.....	2,870	2,372	2,116	1,470	829
Pembina.....	79,486	56,133	196,271	358,275	841,281
Taber.....	54,564	45,035	37,977	28,967	27,116
Wetaskiwin.....	4,088	3,190	2,784	2,575	2,341
Whitcourt.....	106	68	...	...	...
Group 5:					
Camrose.....	30,997	28,212	24,943	23,019	23,411
Castor.....	499,217	482,861	513,148	569,868	615,072
Redcliff.....	3,079	2,398	2,211	2,023	1,993
Sheerness.....	179,437	155,967	174,167	174,601	164,364
Tofield.....	19,052	20,163	20,062	17,550	15,390
Westlock.....	13,306	18,011	20,820	21,178	22,005
Total.....	1,540,576	1,361,600	1,497,171	1,654,293	2,104,912

How the total Output of BITUMINOUS COAL from the Province was disposed of by areas during 1964

Areas	Sold for Consumption in:							Total Sales	Used making Briquettes and Char	Used under Colliery Boilers	Used by Colliery Railways	Put to Stock	Put to Waste	Lifted from Stock	Lifted from Waste	Total Output
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	United States	Japan								
Group 1: Cascade	515	623	12017	...	270	24514	10806	165949	* 33856	3852	...	32494	...	35413	10978	240505
Group 2: Crownest	...	19311	97842	...	1104	1955	3811	446595	...	...	...	81454	...	97289	...	554783
Group 3: Coalapur	...	472	5424	...	...	...	...	...	...	...	...	...	...	...	...	5896
Halcourt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lethbridge	...	14794	39593	2204	465	1624	136	...	** 6412	1053	...	4727	...	5971	...	65637
Totals:	515	39200	154876	2204	1839	28093	14753	612544	42268	4905	...	118675	...	138673	10978	866221

* Used Making Briquettes.

** Used Making Char.

THE MINES DIVISION

How the total Output of SUB-BITUMINOUS COAL from the Province was disposed of by areas during 1964

Areas	Sold for Consumption in:								Total Sales	Used under Coll- very Boilers	Put to Stock	Put to Waste	Lifted from Stock	Lifted from Waste	Total Output
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States							
Group 4:															
Ardley	...	33973	...	...	...	...	...	...	33973	...	...	432	...	...	34405
Brooks	...	6942	...	...	...	...	...	...	6942	...	...	...	...	...	6942
Carbon	...	13608	...	...	...	...	...	...	13608	...	...	403	...	...	14011
Champion	...	3110	...	...	...	...	...	...	3110	...	...	41	...	...	3151
Drumheller	2122	11515	48127	71974	20200	3189	40	...	28167	180	28497	6795	40029	7487	246123
Edmonton	...	85837	42	...	...	544	...	...	86423	55	...	...	...	...	86478
Gleichen	...	829	...	...	...	...	...	...	829	...	...	...	...	...	829
Gravel	...	841281	...	...	...	...	...	...	841281	...	...	...	...	...	841281
Pennington	...	12282	12721	96	1703	314	...	...	27116	...	...	...	...	...	27116
Taber	...	2341	...	...	...	...	...	...	2341	...	...	...	...	...	2341
Wetaskiwin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Group 5:															
Camrose	...	22055	...	...	...	...	...	...	22055	...	...	1356	...	...	23411
Castor	6186	396843	41458	102687	66461	...	* 46	52	613703	90	...	1319	...	...	615072
Redcliff	...	1827	...	...	...	...	...	...	1827	...	...	166	...	...	1993
Sheerness	5628	15308	4796	102124	32387	121	...	...	164364	...	...	...	...	...	164364
Torfield	...	15090	...	86	...	...	...	...	13176	...	...	2214	...	...	15590
Westlock	...	19652	...	...	...	...	...	...	19652	13	...	2140	...	...	22005
Total:	13936	1985693	107114	276967	120751	4168	86	52	2108767	298	28497	14866	40029	7487	2104912

* Sold to N.W.T.

How the total Output of COAL from the Province was disposed of by months during 1964

Months	Sold for Consumption in:								Total Sales	Used making Char	Used under Coal- ery Boilers	Used by Colliery Railways	Put to Stock	Put to Waste	Lifted from Stock	Lifted from Waste	Total Output
	Sold to Railway Companies	Alberta	British Columbia	Sask	Manitoba	Ontario	Quebec	United States	Japan								
January	1765	164917	28915	51136	18208	6689	...	505	53424	327559	5226	571	1301	1233	14842	1060	31988
February	1807	134163	23821	26972	16889	3022	...	1081	33171	232996	2648	694	20798	3477	8097	4128	248310
March	1677	142356	22601	14747	13302	1330	...	2382	70666	285981	4056	668	470	1810	33934	2933	236118
April	1647	104797	17541	4671	1470	1318	...	1682	90593	180157	3300	541	3957	1951	4331	2897	182678
May	1843	108971	15582	2559	541	898	...	1082	32883	141374	1223	387	27180	44	475	405	175958
June	481	59571	11597	2530	541	898	...	1082	32883	141374	1223	387	44471	955	3608	1733	189885
July	176	59543	12032	602	42	567	...	1322	45167	126495	2093	466	44471	3	16718	1492	116860
August	176	97412	16656	4352	1712	3095	...	731	72552	196648	2132	229	5681	34	39679	1492	166557
September	2243	144917	25 3	21860	13273	2398	...	1059	53253	264036	3662	564	1710	50	39679	1308	206557
October	2361	177016	26634	45444	26128	4133	...	1124	36338	319182	2277	364	23420	962	15151	720	330390
November	1224	208944	28073	40310	19752	2963	...	777	82048	384131	** 5747	374	1688	1682	32126	581	360915
December	1130	202210	38631	64282	21528	4528	x 46	1379	29962	363696	** 8853	432	11658	1906	5167	1122	380256
Total:	14451	1620893	261990	279171	122590	32261	86	14805	612544	2958791	**42268	5203	147172	14866	178702	18465	2971133
% of Total Sales:	0.49	54.78	8.85	9.43	4.14	1.10	0.01	0.50	20.70								

How the total Output of BRIQUETTES from the Province was disposed of during 1964

Briquettes:	6645	1413	4648	...	696	4312	17714	*16170	298	...	1549	4403	1904	...	38230
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How the total Output of CHAR from the Province was disposed of during 1964

Char:	5552	...	76	7284	...	12912	756	6575	272	...	19971
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x Sold to N.W.T.

* Briquettes used for making Char.

** 6412 tons of Coal used for making Char.

THE MINES DIVISION

How the total output of BITUMINOUS COAL was disposed of by months during 1964

Months	Sold for Consumption in:								Total Sales	Used making Char Briquettes and	Used under Colliery Boilers	Used by Colliery Railways	Put to Stock	Put to Waste	Lifted from Stock	Lifted from Waste	Total Output
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States	Japan								
January	117	5436	14811	270	18	631	...	505	53424	80875	5226	519	978	...	11300	1060	75135
February	74	5613	13955	...	...	2768	...	909	11171	56600	2668	607	20560	...	1352	1308	75755
March	77	6114	13520	41	38	1935	...	2582	70566	94982	4056	656	320	...	30603	1238	67943
April	39	684	9281	37	...	1310	...	1262	50053	63366	1300	537	3731	...	1750	1172	68012
May	...	567	8299	74	57	608	...	1082	33263	43990	1223	367	20554	...	475	1172	64754
June	...	1351	11187	124	...	805	...	1731	32647	47845	1046	442	33991	...	2671	796	78957
July	...	356	9309	100	...	567	...	1522	65167	77021	2093	168	2932	...	16716	495	65003
August	...	729	11101	79	...	2392	...	731	72552	87584	2137	222	592	...	38946	874	50715
September	46	1838	14705	484	475	1937	...	1059	53553	73797	3662	322	1692	...	1544	1207	76722
October	36	4596	14892	365	349	3096	...	1124	36338	60796	2277	342	21959	...	400	720	84265
November	46	2574	14051	360	409	2463	...	777	82048	102728	5747	342	1335	...	26578	581	82993
December	80	5122	19256	270	390	3881	...	1379	29962	60340	8853	400	11434	...	4138	1122	75767
Total:	515	35200	154876	2204	1839	28093	...	14753	612544	850024	42268	4905	118675	...	138673	10978	866221
% of Total Sales	0.06	4.14	18.22	0.26	0.21	3.30	...	1.74	72.07								

How the total Output of SUB-BITUMINOUS COAL was disposed of by months during 1964

Months	Sold for Consumption in:								Total Sales	Used under Col- lery Boilers	Put to Stock	Put to Waste	Lifted from Stock	Lifted from Waste	Total Output
	Sold to Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States							
January	1648	15081	14104	52866	18127	388	...	...	246584	52	326	1233	3542	...	24653
February	1713	128520	9656	28872	10289	284	...	52	176396	47	198	3477	4765	2818	172555
March	1608	138222	9072	14706	9264	115	...	...	170989	42	150	1810	3131	1695	168175
April	1608	103913	5760	4640	1470	...	...	...	116791	4	226	1951	2981	1725	114666
May	538	97074	4403	1285	244	40	...	...	103844	...	7126	44	...	...	110754
June	481	94626	2350	2406	545	93	...	...	100501	20	11366	955	937	937	110928
July	...	50187	723	502	42	...	...	...	51454	...	...	3	...	...	51457
August	178	96683	5525	4273	1712	703	...	...	109074	...	7089	343	312	312	115882
September	2197	143079	10368	21376	12798	421	...	...	190239	42	18	500	3453	...	187346
October	2325	172420	11746	45079	25779	1037	...	...	298386	27	1461	962	14751	...	246085
November	1178	206370	14022	39950	19343	500	40	...	281403	32	353	1682	5548	...	277922
December	1050	197088	19375	64012	21138	647	x 46	...	301356	32	224	1906	1029	...	304489
Total:	13936	1985693	107114	276967	120751	4168	86	52	2108767	298	28497	14866	40029	7487	2104512
% of Total Sales:	0.66	75.20	5.07	13.13	5.72	.20	.01	.01							

x Sold to N.W.T.

THE MINES DIVISION

PER CAPITA PRODUCTION OF MINES BY AREAS
BITUMINOUS COAL FIELD

Area	Strip and Underground Mining						Strip Mining						Underground Mining					
	Gross tons of coal mined	Total average No. of men employed	Tons of coal mined per man	Total No. of man-shifts	Tons of coal mined per eight man-shift		Gross tons of coal mined	Total average No. of men employed	Tons of coal mined per man	Total No. of man-shifts	Tons of coal mined per eight man-shift		Gross tons of coal mined	Total average No. of men employed	Tons of coal mined per man	Total No. of man-shifts	Tons of coal mined per eight man-shift	
Group 1:																		
Cascade.....	210,505	245	982	60,924	3.95		...	...	...	...	...		210,505	245	982	60,924	3.95	
Group 2:																		
Crowsnest.....	554,783	364	1,524	95,338	5.82		94,782	24	3,949	6,561	14.45		160,001	340	1,353	88,777	5.18	
Group 3:																		
Coalspur.....	5,896	9	655	1,428	4.13		...	...	...	...	...		5,896	9	655	1,428	4.13	
Lethbridge.....	65,037	106	613	22,770	2.86		...	...	...	...	...		65,037	106	613	22,770	2.86	
Total.....	866,221	724	1,196	180,460	4.80		94,782	24	3,949	6,561	14.45		771,439	700	1,102	173,899	4.43	

SUB-BITUMINOUS COAL FIELD

Group 4:	34,405	9	3,823	2,399	14,34	34,405	9	3,823	2,399	14,34	...	...	...	...	...
Ardley.....	6,942	8	866	2,062	3.37	6,942	8	866	2,062	3.37	...	...	...	...	...
Brooks.....	14,011	13	1,078	2,627	5.33	9,850	4	2,462	1,103	8.93	4,161	...	462	1,524	2.73
Champion.....	3,151	8	394	1,422	2.22	...	...	...	...	...	3,151	...	9	1,422	2.22
Drumheller.....	130	130	1,893	24,561	10.01	40,918	8	5,115	1,409	29.04	205,205	...	1,682	23,172	8.85
Edmonton.....	86,478	76	1,138	16,992	5.09	13,034	5	2,607	968	13.19	73,444	...	1,034	16,004	4.59
Gleichen.....	829	2	415	300	2.76	...	...	...	...	...	829	...	415	300	2.76
Pembina.....	841,281	64	13,115	15,518	54.11	841,281	64	13,115	15,518	54.11	...	...	...	...	...
Taber.....	27,116	15	1,808	4,022	6.74	27,116	15	1,808	4,022	6.74	...	...	...	...	...
Metaskiw.....	2,341	1	2,341	191	12.26	2,341	1	2,341	191	12.26	...	...	...	...	...
Group 5:															
Canrose.....	23,411	10	2,341	2,350	9.97	23,411	10	2,341	2,350	9.97	...	...	...	...	...
Castor.....	615,072	81	7,593	15,826	31.02	614,844	80	7,686	19,716	31.18	228	...	228	110	2.07
Redcliff.....	1,993	4	498	778	2.56	...	...	...	...	...	1,993	...	498	778	2.56
Sheerness.....	164,364	27	6,087	7,135	23.03	164,364	27	6,087	7,135	23.03	...	...	...	...	...
Tofield.....	15,390	7	2,199	1,894	8.12	15,390	7	2,199	1,894	8.12	...	...	...	...	...
Westlock.....	22,005	9	2,445	2,452	8.97	22,005	9	2,445	2,452	8.97	...	...	...	...	...
Total.....	2,104,912	464	4,536	104,579	20.13	1,815,901	247	7,352	61,269	29.63	289,011	217	1,332	43,310	6.67

SUMMARY

Bituminous.....	866,221	724	1,196	180,460	4.80	94,782	24	3,949	6,561	14.15	771,439	700	1,102	173,899	4.43
Sub-Bituminous....	2,104,912	464	4,536	104,579	20.13	1,815,901	247	7,352	61,269	29.63	289,011	217	1,332	43,310	6.67
Total.....	2,971,133	1,188	2,501	285,039	10.42	1,930,683	271	7,050	67,830	28.16	1,060,450	917	1,156	217,209	4.88

THE MINES DIVISION

OUTPUT AND NUMBER OF MINES PRODUCING

Kind of Coal	Under 1,000 Tons		1,000 to 5,000 Tons		5,000 to 10,000 Tons		10,000 to 50,000 Tons		50,000 to 100,000 Tons		100,000 to 150,000 Tons		150,000 to 200,000 Tons		200,000 to 300,000 Tons		Over 300,000 Tons		Total	
	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output
Bituminous.....	..	...	1	1,660	2	10,953	..	...	2	158,855	..	...	..	...	1	240,505	1	454,248	7	866,221
Sub-bituminous....	10	2,540	8	18,879	5	37,959	15	265,270	..	...	..	...	2	354,501	1	228,510	2	1,157,253	143	2,104,512
Total.....	10	2,540	9	20,539	7	48,912	15	265,270	2	158,855	..	...	2	354,501	2	469,015	3	1,651,501	50	2,971,133

AMOUNT OF COAL DISPOSED OF DURING THE YEAR BY AREA, ACCORDING TO SIZE GRADING

SIZE GRAD- ING AREA	RUN OF MINE	LUMP OR COBBLE	EGG	NUT OR STOVE	PRE- PARED STOKER	NUT SLACK	SLACK	TOTAL BY AREA.
FOR CONSUMPTION IN MANITOBA								
Cascade	189	...	...	...	81	...	...	270
Crowsnest	...	...	...	...	533	533	38	1104
Lethbridge	...	393	72	...	...	...	...	465
Drumheller	...	14902	3645	140	1513	...	...	20200
Taber	...	123	1578	2	...	...	...	1703
Castor	...	13136	1708	1892	49725	...	...	66461
Sheerness	...	1880	212	2909	27386	...	...	32387
Total	189	30434	7215	4943	79238	533	38	122590
FOR CONSUMPTION BY RAILWAY COMPANIES								
Cascade	472	...	...	...	43	...	...	515
Drumheller	...	107	1008	1007	...	...	...	2122
Castor	...	...	5694	...	492	...	...	6186
Sheerness	...	...	1732	...	3896	...	...	5628
Total	472	107	8434	1007	4431	...	...	14451
FOR CONSUMPTION IN QUEBEC								
Drumheller	...	...	40	...	...	...	...	40
Total	...	...	40	...	...	...	...	40
FOR CONSUMPTION IN N.W.T.								
Castor	...	...	34	...	...	...	12	46
Total	...	...	34	...	...	...	12	46

THE MINES DIVISION

AMOUNT OF COAL DISPOSED OF DURING THE YEAR BY AREA, ACCORDING TO SIZE GRADING

AREA \ SIZE GRADING	RUN OF MINE	LUMP OR COBBLE	EGG	NUT OR STOVE	PRE-PARED STOKER	NUT SLACK	SLACK	TOTAL BY AREA.
FOR CONSUMPTION IN ONTARIO								
Cascade	...	541	...	335	20946	2466	226	24514
Crowsnest	...	...	...	...	1955	...	...	1955
Lethbridge	...	1160	464	...	...	...	...	1624
Drumheller	...	2107	934	42	106	...	...	3189
Edmonton	...	500	...	44	...	...	...	544
Taber	...	255	36	10	13	...	...	314
Sheerness	...	24	97	...	...	...	...	121
Total	...	4587	1531	431	23020	2466	226	32261
FOR CONSUMPTION IN UNITED STATES								
Cascade	7988	...	...	...	...	2818	...	10806
Crowsnest	...	...	...	...	542	1268	2001	3811
Lethbridge	...	...	...	...	63	...	73	136
Castor	...	...	...	...	52	...	...	52
Total	7988	...	...	...	657	4086	2074	14805
FOR CONSUMPTION IN JAPAN								
Cascade	...	...	...	...	1311	...	164638	165949
Crowsnest	...	...	...	...	...	446595	...	446595
Total	...	...	...	...	1311	446595	164638	612544

PRODUCTION OF COAL PER EIGHT-HOUR MAN-SHIFT
For the Years 1945 to 1964 Inclusive

Year	Gross tons of coal mined	Total No. of Eight-hour Man-shifts	Average No. of tons of coal mined Per Eight-hour shift
1945.....	7,801,248	1,990,452	3.919
1946.....	8,824,455	2,105,511	4.191
1947.....	8,074,596	1,998,002	4.041
1948.....	8,111,013	1,894,837	4.280
1949.....	8,616,983	1,910,922	4.510
1950.....	8,118,206	1,735,316	4.678
1951.....	7,661,276	1,683,061	4.552
1952.....	7,194,472	1,522,264	4.726
1953.....	5,917,423	1,141,531	5.184
1954.....	4,859,136	943,558	5.150
1955.....	4,456,578	783,239	5.690
1956.....	4,329,639	750,318	5.770
1957.....	3,155,354	535,346	5.894
1958.....	2,519,939	386,636	6.517
1959.....	2,549,517	377,870	6.747
1960.....	2,404,093	366,970	6.551
1961.....	2,027,826	285,142	7.112
1962.....	2,087,310	277,198	7.530
1963.....	2,289,943	254,671	8.992
1964.....	2,971,133	285,039	10.423

THE MINES DIVISION

AMOUNT OF MINE TIMBER USED DURING THE YEAR

BITUMINOUS COAL FIELD

Area	Timber lineal feet	Lumber B.M. feet	Lagging lineal feet	Ties lineal feet	Sprags lineal feet
Group 1: Cascade.....	354,033	...	774,478	18,659	...
Group 2: Crownsnest.....	701,587	758,569	97,189	9,596	...
Group 3: Coalspur.....	3,000	2,000	4,000	600	...
Lethbridge.....	42,307	...	...	15,939	...
Total.....	1,100,927	760,569	875,667	44,794	...

SUB-BITUMINOUS COAL FIELD

Group 4: Carbon.....	35,000	900	4,400	3,900	...
Champion.....	7,258	500	3,100	250	...
Drumheller.....	285,270	1,200	700	22,725	...
Edmonton.....	176,632	10,890	16,420	13,350	...
Gleichen.....	3,000	...	...	75	...
Group 5: Castor.....	2,100	8,600	...	...	...
Redcliff.....	14,960	...	...	...	...
Total.....	524,220	22,090	24,620	40,300	...

PARTICULARS OF LAMPS IN THE BITUMINOUS AND SUB-BITUMINOUS COAL FIELDS DURING THE YEARS 1963 and 1964.

BITUMINOUS COAL FIELD

	<u>1963</u>	<u>1964</u>
Portable Electric Lamps, Edison Cap Type.....	680	723
Wolfe Flame Type.....	82	79
Total.....	<u>762</u>	<u>802</u>

SUB-BITUMINOUS COAL FIELD

Portable Electric Lamps, Edison Cap Type.....	316	279
Wolfe Flame Type.....	32	32
Total.....	<u>348</u>	<u>311</u>

QUANTITY OF EXPLOSIVES USED IN POUNDS FOR BLASTING COAL

BITUMINOUS COAL FIELD

Area	Name of Explosives							Total
	Pellet	Monobel	BL-100	CXL-ite	Airdox	Cardox	Forcite	
Group 1:								
Cascade.....	...	54,650	...	...	...	...	...	54,650
Group 2:								
Crowsnest....	...	23,990	...	...	...	...	...	23,990
Group 3:								
Coalspur.....	...	1,550	...	...	...	...	...	1,550
Lethbridge...	...	8,300	...	...	...	...	...	8,300
Total.....	...	88,490	...	...	...	...	...	88,490

SUB-BITUMINOUS COAL FIELD

Group 4:								
Ardley.....	...	4,000	...	...	...	...	...	4,000
Brooks.....	153	800	1,980	...	...	...	...	2,933
Carbon.....	950	625	...	...	...	...	...	1,575
Champion.....	150	450	...	...	...	...	...	600
Drumheller...	...	60	...	...	21,637	...	...	21,697
Edmonton.....	...	12,550	...	...	...	...	...	12,550
Gleichen.....	180	...	...	...	...	...	...	180
Pembina.....	...	8,900	...	...	...	...	...	8,900
Wetaskiwin...	...	...	...	...	...	...	500	500
Group 5:								
Camrose.....	...	630	...	...	...	...	...	630
Castor.....	100	7,396	...	...	...	...	...	7,496
Redcliff.....	370	200	...	...	...	...	...	570
Tofield.....	...	500	1,200	...	...	...	600	2,300
Westlock.....	...	100	...	...	...	...	...	100
Total.....	1,903	36,211	3,180	...	21,637	...	1,100	64,031

THE MINES DIVISION

ESTIMATED NUMBER OF SHOTS FIRED FOR BLASTING COAL

BITUMINOUS COAL FIELD

Area	Electric Detonators	Electric Squibs	Cardox Heaters	Total
Group 1:				
Cascade.....	66,662	...	...	66,662
Group 2:				
Crowsnest.....	17,367	...	...	17,367
Group 3:				
Coalspur.....	1,200	...	...	1,200
Lethbridge.....	15,370	...	...	15,370
Total.....	100,599	...	...	100,599

SUB-BITUMINOUS COAL FIELD

Group 4:				
Ardley.....	5,700	...	...	5,700
Brooks.....	700	2,404	...	3,104
Carbon.....	813	1,300	...	2,113
Champion.....	550	150	...	700
Drumheller.....	1,763	...	20,000	21,763
Edmonton.....	15,627	...	...	15,627
Gleichen.....	...	150	...	150
Pembina.....	4,470	...	...	4,470
Wetaskiwin.....	1,032	...	...	1,032
Group 5:				
Camrose.....	800	...	...	800
Castor.....	9,406	71	...	9,477
Redcliff.....	196	280	...	476
Tofield.....	1,040	...	...	1,040
Westlock.....	133	...	...	133
Total.....	42,230	4,355	20,000	66,585

NUMBER OF MISSED FIRE SHOTS RECORDED IN BLASTING COAL

Carbon.....	3	1	...	4
Total.....	3	1	...	4

NUMBER OF TONS OF COAL PRODUCED PER POUND OF
EXPLOSIVES USED

BITUMINOUS COAL FIELD

Area	Number of tons of coal mined	Number of pounds of explosives used	Tons of coal mined per pound of explosives used
Group 1:			
Cascade.....	240,505	54,650	4.40
Group 2:			
Crownsnest.....	554,783	23,990	23.12
Group 3:			
Coalspur.....	5,896	1,550	3.80
Lethbridge.....	65,037	8,300	7.83
Total.....	866,221	88,490	9.80

SUB-BITUMINOUS COAL FIELD

Group 4:			
Ardley.....	34,405	4,000	8.60
Brooks.....	6,942	2,933	2.37
Carbon.....	14,011	1,575	8.89
Champion.....	3,151	600	5.25
Drumheller.....	246,123	21,697	11.34
Edmonton.....	86,478	12,550	6.89
Gleichen.....	829	180	4.61
Pembina.....	841,281	8,900	94.52.60
Taber.....	27,116	...	...
Wetaskiwin.....	2,341	500	4.68
Group 5:			
Camrose.....	23,411	630	37.16
Castor.....	615,072	7,496	82.05
Redcliff.....	1,993	570	3.50
Sheerness.....	164,364	...	...
Tofield.....	15,390	2,300	6.69
Westlock.....	22,005	100	220.05
Total.....	2,104,912	64,031	32.87

THE MINES DIVISION

QUANTITY OF EXPLOSIVES USED IN POUNDS FOR BLASTING ROCK
IN COAL MINES

BITUMINOUS COAL FIELD

Area	Pellet	Monobel	BL-100	CXL-ite	Airdox	Cardox	Forcite	Total
Group 1: Cascade.....	...	5,850	...	...	...	...	...	5,850
Group 2: Crowsnest.....	...	3,000	...	11,092	...	...	650	14,742
Group 3: Coalspur.....	...	400	...	...	...	...	...	400
Total.....	...	9,250	...	11,092	...	...	650	20,992

SUB-BITUMINOUS COAL FIELD

Group 4: Brooks.....	...	2,100	...	...	...	...	...	2,100
Carbon.....	...	250	...	...	...	...	30	280
Drumheller....	...	50	...	...	...	...	...	50
Gleichen.....	200	...	...	...	...	...	...	200
Taber.....	...	...	...	...	...	...	642	642
Group 5: Redcliff.....	...	...	...	...	...	...	18	18
Total.....	200	2,400	...	...	...	...	690	3,290

ESTIMATED NUMBER OF SHOTS FIRED FOR BLASTING ROCK
IN COAL MINES

BITUMINOUS COAL FIELD

Area	Electric Detonators	Electric Squibs	Total
Group 1: Cascade.....	7,138	...	7,138
Group 2: Crowsnest.....	13,125	...	13,125
Group 3: Coalspur.....	600	...	600
Total.....	20,863	...	20,863

SUB-BITUMINOUS COAL FIELD

Group 4: Brooks.....	35	...	35
Carbon.....	308	...	308
Drumheller.....	1,763	...	1,763
Gleichen.....	150	...	150
Taber.....	440	...	440
Group 5: Redcliff.....	12	...	12
Total.....	2,708	...	2,708

THE MINES DIVISION

ELECTRICITY

Area	Number of Mines using Electricity	Horsepower of Electrical Equipment in Use		Total Horsepower	Purchased Power
		Above Ground	Below Ground		
Ardley.....	2	65	...	65	473
Brooks.....	1	33	...	33	26,490
Camrose.....	2	136	...	136	47,400
Carbon.....	4	40	143	183	45,618
Cascade.....	1	5,436	340	5,776	10,185,600
Castor.....	3	4,131	...	4,131	3,754,700
Champion.....	1	15	...	15	1,200
Coalspur.....	1	61	...	61	...
Crownsnest.....	3	3,318	400	3,718	3,509,679
Drumheller.....	4	2,146	1,628	3,774	1,462,333
Edmonton.....	5	494	1,126	1,620	434,030
Gleichen.....	1	5	32	37	...
Lethbridge.....	1	1,138	1,476	2,614	1,565,967
Pembina.....	2	6,296	...	6,296	...
Redcliff.....	1	92	91	183	23,420
Sheerness.....	1	1,559	...	1,559	769,500
Taber.....	1	562	...	562	35,120
Tofield.....	2	181	...	181	59,446
Westlock.....	2	34	...	34	10,000
Westaskiwin.....	1	10	...	10	...
Total.....	39	25,752	5,236	30,988	21,930,976

COAL-CUTTING MACHINERY

Area	No. of Machines Operated by :			Tons of Coal Mined by :	
	Electricity	Compressed Air		Electricity	Compressed Air
		Picks	Machines		
Carbon.....	3	...	...	4,055	...
Cascade.....	...	30	...	...	120,252
Champion.....	...	...	2	...	2,920
Coalspur.....	...	...	3	...	5,900
Crownsnest.....	...	...	3	...	5,058
Drumheller.....	14	...	...	205,310	...
Edmonton.....	18	...	...	73,444	...
Gleichen.....	1	...	...	829	...
Lethbridge.....	8	...	...	64,023	...
Redcliff.....	2	...	...	1,994	...
Total.....	46	30	8	349,655	134,130

Accidents during 1964, classified according to the Mines
in which they occurred

Name of Operator	Area	Above Ground				Below Ground				Total Above and Below Ground
		Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
Bituminous	Cascade.....	..	..	1	1	1	..	7	8	9
	Coleman Collieries Ltd. (1747).....	..	..	4	4	..	3	2	5	9
	Lethbridge Collieries Limited (1263).....	..	..	..	..	..	..	5	5	5
Sub-Bituminous	Castor.....	..	..	1	1	..	..	..	..	1
Total.....		..	..	6	6	1	3	14	18	24

THE MINES DIVISION

ACCIDENTS AS THEY OCCURRED BY MONTHS DURING THE YEAR 1964

Months	Above Ground				Below Ground				Total Above and Below Ground
	Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
January.....	1	1	1
February.....
March.....	1	1	..	..	3	3	4
April.....	1	1	2	2
May.....	1	1	..	..	..	..	1
June.....	1	1	1	3	3
July.....	1	1	..	..	1	1	2
August.....	2	2	..	..	..	..	2
September.....	1	1	..	..	3	3	4
October.....	2	2	2
November.....	1	1	2	2
December.....	1	1	1
Total.....	6	6	1	3	14	18	24

ACCIDENTS OCCURRING IN THE PROVINCE ABOVE AND BELOW GROUND
DURING THE YEAR 1964

Causes	Above Ground				Below Ground				Total Above and Below Ground
	Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
Drilling at Face.....	1	1	1
Fall of Coal at Face.....	2	3	5	5
Fall of Rock at Face.....	1	1	1	3	3
Haulage.....	1	1	..	..	4	4	5
Locomotive Haulage.....	1	1	1
Miscellaneous.....	3	3	..	..	2	2	5
Packing Timber.....	1	1	1
Tipple.....	1	1	..	..	..	..	1
Shotfiring.....	1	1	1
Strip Mining.....	1	1	..	..	..	..	1
Total.....	6	6	1	3	14	18	24

ACCIDENTS OCCURRING IN THE PROVINCE ABOVE AND BELOW GROUND FOR THE
YEAR 1964, CLASSIFIED ACCORDING TO THE AREA IN WHICH THEY OCCURRED

BITUMINOUS

Area	Above Ground				Below Ground				Total Above and Below Ground
	Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
Cascade.....	1	1	1	..	7	8	9
Crowsnest.....	4	4	..	3	2	5	9
Lethbridge.....	5	5	5
Total.....	5	5	1	3	14	18	23

SUB-BITUMINOUS

Castor.....	..	..	1	1	..	..	..	..	1
Total.....	..	..	1	1	..	..	..	..	1

FATAL ACCIDENTS

John Pal, 34, miner, on June 8th, at Canmore Mine, operated by Canmore Mines Limited, Canmore. While retimbering a cave at the face of 37 Jig, No. 3 Mine, he was struck by a fall of rock from a second cave and causing fatal injuries.

THE MINES DIVISION

NUMBER OF TONS PRODUCED PER ACCIDENT

BITUMINOUS COAL FIELD

Area	Output	No. of Tons Produced Per Accident			
		Fatal	Serious	Slight	Total
Group 1:					
Cascade.....	240,505	240,505	...	30,063	26,723
Group 2:					
Crownsnest.....	554,783	...	184,928	92,464	61,643
Group 3:					
Coalspur.....	5,896	...	...	...	...
Lethbridge.....	65,037	...	...	13,007	13,007
Total.....	866,221	866,221	288,740	45,591	37,662

SUB-BITUMINOUS COAL FIELD

Group 4:					
Ardley.....	34,405	...	...	...	...
Brooks.....	6,942	...	...	...	...
Carbon.....	14,011	...	...	...	...
Champion.....	3,151	...	...	...	...
Drumheller.....	246,123	...	...	...	...
Edmonton.....	86,478	...	...	...	...
Gleichen.....	829	...	...	...	...
Pembina.....	841,281	...	...	...	...
Taber.....	27,116	...	...	...	...
Wetaskiwin.....	2,341	...	...	...	...
Group 5:					
Canrose.....	23,411	...	...	...	...
Castor.....	615,072	...	...	615,072	615,072
Redcliff.....	1,993	...	...	...	...
Sheerness.....	164,364	...	...	...	...
Tofield.....	15,390	...	...	...	...
Westlock.....	22,005	...	...	...	...
Total.....	2,104,912	...	...	2,104,912	2,104,912

SUMMARY

Bituminous.....	866,221	866,221	288,740	45,591	37,662
Sub-Bituminous.....	2,104,912	...	...	2,104,912	2,104,912
Total.....	2,971,133	2,971,133	990,378	148,557	123,797

CLASSIFICATION OF ACCIDENTS ACCORDING TO OUTPUT OF MINES WHICH PRODUCED DURING THE YEAR 1964

Accidents	Under 1,000 tons	1,000 to 5,000 tons	5,000 to 10,000 tons	10,000 to 50,000 tons	50,000 to 100,000 tons	100,000 to 150,000 tons	150,000 to 200,000 tons	200,000 to 300,000 tons	Over 300,000 tons	Total
Fatal.....	1	...	1
Serious.....	3	3
Slight.....	5	...	...	9	6	20
Total.....	5	...	...	10	9	24

TONS OF COAL PRODUCED PER ACCIDENT

Fatal.....	...	...	...	...	...	...	...	469,105	...	2,971,133
Serious.....	...	...	...	...	...	...	...	...	550,500	990,380
Slight.....	...	...	...	...	31,771	...	...	52,113	275,250	118,556
Total.....	...	...	...	...	31,771	...	...	46,901	183,500	123,797

THE MINES DIVISION

ACCIDENTS

Summary Table showing Accidents occurring in the Mines from 1945 to 1964 inclusive, reportable under The Coal Mines Regulation Act.

Year	Output	Accidents			Tons of Coal Mined Per Accident		
		Fatal	Serious	Slight	Fatal	Serious	Slight
1945.....	7,801,248	23	51	168	339,185	154,925	446,436
1946.....	8,824,455	12	76	128	735,371	116,111	68,941
1947.....	8,074,596	15	121	117	538,306	66,732	69,014
1948.....	8,111,013	13	91	93	623,924	89,132	87,215
1949.....	8,616,983	13	89	108	662,076	96,708	79,694
1950.....	8,118,206	20	86	97	405,910	94,398	83,693
1951.....	7,661,276	9	85	53	851,253	90,133	144,552
1952.....	7,194,472	7	79	79	1,027,782	91,069	91,069
1953.....	5,917,423	10	59	60	591,742	100,295	98,623
1954.....	4,859,136	8	51	41	607,392	95,277	118,516
1955.....	4,456,578	3	54	52	1,485,526	82,529	85,703
1956.....	4,329,639	6	34	33	721,607	127,342	131,201
1957.....	3,155,354	2	25	15	1,577,677	126,214	210,357
1958.....	2,519,939	6	19	8	419,990	132,628	314,992
1959.....	2,549,517	1	18	10	2,549,517	141,639	254,952
1960.....	2,404,093	2	16	21	1,202,047	150,256	114,481
1961.....	2,027,826	1	9	11	2,027,826	225,314	184,348
1962.....	2,087,310	4	5	23	521,827	417,462	90,753
1963.....	2,289,943	1	3	11	2,289,943	763,314	208,177
1964.....	2,971,133	1	3	20	2,971,133	990,378	148,557

COMPARISON OF PROTECTIVE CLOTHING USED FOR THE YEARS
1962, 1963 and 1964.

Clothing	1962	1963	1964
Hard Hats.....	1,036	901	1,010
Safety Shoes, pairs.....	689	600	642
Goggles, pairs.....	176	195	180
Knee Pads, pairs.....	34	19	30

Comparison of Accidents per 1,000,000 tons and per 1,000 men employed, 1945 - 1964.

Year	Tonnage	Total No. of men employed	Fatal Accidents			Serious Accidents			Slight Accidents			Total	
			No.	Per 1,000,000 tons	Per 1,000 men employed	No.	Per 1,000,000 tons	Per 1,000 men employed	No.	Per 1,000,000 tons	Per 1,000 men employed	Per 1,000,000 tons	Per 1,000 men employed
1945.....	7,801,248	8,309	23	2.93	2.76	51	6.53	6.13	166	21.53	20.24	31.02	29.12
1946.....	8,424,455	8,593	12	1.36	1.39	76	8.61	8.85	128	14.50	14.21	24.47	25.16
1947.....	8,074,596	8,772	15	1.66	1.71	121	11.98	13.79	117	14.19	13.33	21.33	22.84
1948.....	8,111,013	8,865	13	1.51	1.47	91	11.22	10.27	93	11.47	10.49	24.39	22.22
1949.....	8,616,983	8,662	13	1.60	1.50	89	10.33	10.25	108	12.53	12.44	24.37	24.16
1950.....	8,118,206	7,999	20	2.46	2.50	86	10.59	10.75	97	11.25	12.13	25.01	25.36
1951.....	7,651,276	7,339	9	1.17	1.23	85	11.09	11.58	53	6.92	7.22	14.7	20.03
1952.....	7,194,472	6,936	7	0.97	1.01	79	10.98	11.39	79	10.98	11.39	16.5	22.79
1953.....	5,917,423	5,760	10	1.69	1.74	59	9.97	10.24	60	10.14	10.42	21.80	22.40
1954.....	4,659,136	4,719	8	1.65	1.70	51	10.19	10.61	41	8.43	8.69	20.50	21.19
1955.....	4,456,578	3,801	3	0.67	0.79	54	12.12	14.21	52	11.67	13.68	109	24.46
1956.....	4,329,639	3,443	6	1.39	1.74	34	7.85	9.88	33	7.62	9.58	73	16.86
1957.....	3,155,354	2,795	2	0.63	0.72	25	7.92	8.94	15	4.75	5.37	42	13.31
1958.....	2,519,939	2,021	6	2.36	2.97	19	7.54	9.40	8	3.17	3.96	33	13.10
1959.....	2,519,517	1,720	1	0.39	0.58	18	7.07	10.46	10	3.92	5.82	29	11.37
1960.....	2,104,093	1,729	2	0.83	1.16	16	6.66	9.25	21	8.74	12.11	39	16.22
1961.....	2,027,826	1,323	1	0.49	0.76	9	4.44	6.80	11	5.42	8.31	21	10.36
1962.....	2,087,310	1,281	1	1.92	3.12	3	2.39	3.90	23	11.02	17.95	32	15.33
1963.....	2,269,943	1,151	1	0.44	0.67	3	1.31	2.61	11	4.80	9.56	15	6.55
1964.....	2,971,133	1,168	1	0.34	0.64	3	1.01	2.52	20	6.73	16.83	24	8.06

THE MINES DIVISION

BOARD OF EXAMINERS

The Board of Examiners during the year 1964 consisted of the following:

As representing:

The Mine Inspectorate: J.A. Dutton, Director of Mines.
 Managers: H. Crawford and P.M. Ramsay.
 Working Miners: H.R. Sherwood and G.B. Hunter.
 Secretary: M.B. Rasmussen.

Examinations for the following classes of certificates were held in Edmonton and Calgary on June 2nd, 1964.

One candidate presented himself for examination for Third Class (Underground) Certificate, and he was successful.

One candidate presented himself for examination for Second Class Mine Electrician's Certificate, and he was successful.

Two candidates presented themselves for examination for Manager's (Strip Mine) Certificates, and both were successful.

Nine candidates presented themselves for examination for Foremen's (Strip Mine) Certificates, and five were successful.

One candidate presented himself for examination for Blaster's (Strip Mine) Certificate, and he was successful.

The following list gives the names of successful candidates.

UNDERGROUND MINES

THIRD CLASS

Name	Address	Cert. No.	Date of Certificate
Fumagalli, Anthony	Bellevue	21	17- 8-64

SECOND CLASS MINE ELECTRICIAN

Fridel, Joseph T.	Edmonton	7	19- 6-64
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STRIP MINES

MANAGER

Carr, Gordon P.	Sheerness	11	22- 6-64
Saboe, Owen L.	Forestburg	12	23- 6-64

FOREMAN

Burrell, Archibald K.	Drumheller	31	23- 6-64
Fox, Lorne T.	Forestburg	32	26- 6-64
Watt, Earl R.	Alix	33	14- 7-64
Venne, Edward M.	Wabamun	35	5-10-64
Bish, Grant T.	Forestburg	36	3-11-64

BLASTER

McKay, John S.	Forestburg	7	25- 6-64
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In addition to the above, the following substitute certificate as Strip Mine Foreman was issued:-

Ostertag, Gordon	Evansburg	34	24- 9-64
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EXAMINATIONS UNDER THE QUARRIES REGULATION ACT

Written examinations for certificates under the above Act were held in Edmonton and Calgary on June 2nd, 1964.

One candidate presented himself for examination for Manager's Certificate and was unsuccessful.

Five candidates presented themselves for examination for Foremen's Certificates and three were successful.

The following list gives the names of successful candidates.

QUARRIES

FOREMAN

Name	Address	Cert. No.	Date of Certificate
Jordon, James M.	Exshaw	39	8- 6-64
Crawford, Andrew B.	Edmonton	40	8- 6-64
Gosney, Fred W.	Edmonton	41	8- 6-64

The following candidate was successful, by oral examination, for a Quarry Blaster's Certificate.

BLASTER

Kennedy, William	Rosedale	64	12- 3-64
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LIST OF MINES PRODUCING DURING

The Year 1964

Character of Coal:- Bituminous

MINE NO.	OPERATOR	MINE OFFICE ADDRESS	MINE LOCATION L.S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
2	Cascade Area	Cannore.....	Parts 24-10-5	Cannore Smokeless Coal, Cannore Briquettes.....	1891
	The Cannore Mines Limited.				
846	Coalspur Area	Mercoial.....	3-19-48-21-5	McLeod River Hard Coal Co. (1941) Ltd.....	1963
	McLeod River Hard Coal Co. (1941) Ltd....				
1695 1731 1747 1760	Crownsnest Area	Coleman..... Blairmore..... Coleman..... Coleman.....	12 -7 -6-5 8 -9 -6 -2-5 16-19 -9 -4-5 5-20 -9 -4-5	Coleman Coal..... Standard..... Vicary Creek Coal..... Vicary.....	1949 1960 1957 1964
	Coleman Collieries Ltd....				
	Castle Coal Co.....				
	Coleman Collieries Ltd....				
	Coleman Collieries Limited.				
1263	Lethbridge Area	Shaughnessy.....	11-30-10-21-4	Cadillac Coal, Galt Coal, Imperial Coal.....	1927
	Lethbridge Collieries Ltd.				

LIST OF MINES PRODUCING DURING

The Year 1964

Character of Coal:- Sub-bituminous

MINES NO.	OPERATOR	MINES OFFICE ADDRESS	MINES LOCATION L.S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
809 1734 1758	Ardley Area Sisson's Mine..... John Lyness..... Conger Mine.....	Alix..... Delburne..... Alix.....	S.W. $\frac{1}{4}$ of 2-39-23-4 7-20-38-23-4 2&11-39-22-4	Sisson's Coal..... Lyness Coal..... Parkland.....	1919 1953 1963
1404 1672	Brooks Area Kleenbirm Collieries Ltd.. Coral Coals Ltd.....	Bow City..... Rolling Hills.....	Pts. of 15-17-17-4 1&8-3-14-13-4	Birmwel Coal..... Coral Coal, Rolling Hills Coal...	1932 1948
724 1603	Camrose Area Burnstad Coal Ltd..... Camrose Collieries Ltd....	Round Hill..... Camrose.....	N. $\frac{1}{2}$ of 14&15-17-46-19-4 6-14-48-18-4	Burnstad's Coal..... Camcoal, Camrose Coal.....	1917 1943
53 194 921 1283 1761	Carbon Area Alfred Fox..... New Ghost Pine Coal Co. Ltd.. Erich Reissig..... Halbert Coal Mine..... Halbert Coal Mine.....	Carbon..... Three Hills..... Trochu..... Trochu..... Trochu.....	15-11-29-23-4 4&9-31-22-4 15&16-11-33-23-4 8-14-33-23-4 13-32-33-22-4	Carbon Sunrise Coal..... New Ghost Pine Coal..... Meadow Bank Coal..... Comfort Coal..... Comfort.....	1898 1909 1921 1928 1964

LIST OF MINES PRODUCING DURING

The Year 1964

Character of Coal:- Sub-bituminous

MINE NO.	OPERATOR	MINE OFFICE ADDRESS	MINE LOCATION L.S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
902 1046	Castor Area O. V. Remillard..... Battle River Coal Co. Ltd.	Castor..... Halkirk.....	9-33-37-11-4 15-16-20-10-15-4	Remillard Coal..... Cordel Coal, Vesta Coal, Sterling, Victory Coal, Blue Flame Coal...	1921 1922 1911 1913
1578 1611	Forestburg Collieries Ltd. Stettler Coal Co. Ltd.... Champion Area	Forestburg..... Halkirk.....	N.W. $\frac{1}{4}$ of 11-25-10-16-4	Diplomat Coal, Ambassador..... All-Fire Coal.....	
1137 1509	Smith Mine..... Champion Coal Co. Ltd.... Drumheller Area	Champion..... Champion.....	2-3 -4-16-23-4 4 -3-15-23-4	Smith Coal..... Champion Coal.....	1914 1937
1573	Amalgamated Coals Ltd.....	East Coulee.....	1- 7-27-18-4	Meteor Coal, New Star Coal, Western Crown Coal, Western Monarch Coal, New Mercury Coal, New Murray Coal, New Midland Coal, New Rosedale Coal, Hy-Grade, Purity Hard..... Burn Brite Coal..... Cozy Coal..... Subway Coal..... Atlas Coal, Commander Coal, New Wild Fire Coal, New Murray Coal, Western Gem, Hy-Grade, Purity Hard. Premier Coal.....	1910 1913 1917 1917
1599 1655 1666 1742	Burn Brite Coal Company... J. Wakaruk & Partners..... Subway Coal Company..... Century Coals Limited.....	Delia..... Drumheller..... Rosedale..... East Coulee.....	9-22-28-18-4 9-22-29-20-4 15-16-28-19-4 11- 6-27-18-4		
1756 1759	Fox Coulee Coals Ltd..... Alan R. Menzies.....	Drumheller..... East Coulee.....	2-17-29-20-4 18-28-19-4 W. $\frac{1}{2}$ 11&E. $\frac{1}{2}$ 12		1956 1960 1964

LIST OF MINES PRODUCING DURING

The Year 1964

Character of Coal:- Sub-bituminous

MINE NO.	OPERATOR	MINE OFFICE ADDRESS	MINE LOCATION L. S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
720 1266 1582 1626 1727	Edmonton Area Slide Hill Coal Co. Ltd. Black Gem Coal Company Ltd. Egg Lake Coal Co. Ltd. Star-Key Mines Limited Whitemud Creek Coal Co. Ltd.	Edmonton..... Nanao..... Morinville..... St. Albert..... Edmonton.....	N.W. $\frac{1}{4}$ of 5-51-25-4 N.W. $\frac{1}{4}$ of 36-54-25-4 W. $\frac{1}{2}$ of 36-56-26-4 16, 10, 11-35-54-25-4 S.W. $\frac{1}{4}$ of 13-52-25-4	Slide Hill Coal..... Black Gem Coal..... Egg Lake Coal..... Star-Key Coal..... Red Hot Coal.....	1960 1927 1941 1945 1952
1431	Gleichen Area Consumer's Mine..... Pembina Area	Rosebud.....	346-29-26-21-4	Consumer's Coal.....	1933
1670 1739 1757	Warburg Coal Co. Ltd..... Charles Ostertag..... Alberta Coal Limited..... Redcliff Area	Warburg..... Evansburg..... Wabamun..... Medicine Hat.....	12-13-19 -3-5 10-54 -7-5 14-15-53 -4-5	Pinter Coal..... Pembina Peerless Coal..... Whitewood..... Ajax Coal.....	1948 1954 1962 1918
772	Ajax Coal Company..... Sheerness Area	Medicine Hat.....	1 -6-13 -6-4	Ajax Coal.....	1918
1443	Great West Coal Company, Ltd.	Sheerness.....	13-29-13-4	Roselyn, Berry Creek, Volcano..	1915

LIST OF MINES PRODUCING DURING

The Year 1961

Character of Coal:- Sub-bituminous

<div>MINE NO.</div>	<div>OPERATOR</div>	<div>MINE OFFICE ADDRESS</div>	<div>MINE LOCATION L.S. S. T. R. M.</div>	<div>REGISTERED TRADE NAME</div>	<div>DATE OF OPENING</div>
1604	<div>Taber Area</div> <div>Alberta Coal Sales Limited.</div> <div>Tofield Area</div>	Taber.....	1&12-10-17-4	Majestic Coal, Southalta Coal...	1943
215 1107 1624	<div>Jet Construction Ltd.....</div> <div>Black Nugget Coal Ltd.....</div> <div>Ryalta Coal.....</div> <div>Westlock Area</div>	<div>Ryley.....</div> <div>Dodds.....</div> <div>Ryley.....</div>	<div>S. $\frac{1}{2}$ of</div> <div>Pts. of</div> <div>11-49-18-4</div> <div>11-49-18-4</div> <div>12-9-49-17-4</div>	<div>Red Flame Coal.....</div> <div>Black Nugget.....</div> <div>Ryalta Coal.....</div>	1909 1923 1945
1523 1562	<div>Picardville Coal Co. (1960) Ltd.</div> <div>North Point Coal Co. Ltd..</div> <div>Metaskiwin Area</div>	<div>Picardville.....</div> <div>Thorild.....</div>	<div>16-35-58-27-4</div> <div>1-11-60-21-4</div>	<div>Picardville Coal.....</div> <div>North Point Coal.....</div>	1960 1939
1743	Blue Bird Coal Company....	Leduc.....	12&13-20-48-25-4	Blue Bird Coal.....	1956

LIST OF QUARRIES PRODUCING DURING

The Year 1964

QUARRY NO.	OPERATOR	QUARRY OFFICE ADDRESS	QUARRY LOCATION L.S. S. T. R. M.	DATE OF OPENING
Q 2	Cascade Area	Canada Cement Company Limited.....	Pts. of 17, 18 & 2-21- 9-5 21-24-10-5 15, 16 & 2-23- 9-5 12-7-24- 9-5 15-7-24- 9-5 11 & 12-34-24-10-5	1906 1962 1960 1960 1961 1962 1963
Q 28		Rundle Rock Building Stone Co. Ltd.....		
Q 47		Loders Lime Company Limited.....		
Q 50		Ribbon Creek.....		
Q 58		Thunderstone Quarries Ltd.....		
Q 59		Industrial Quartzite Ltd.....		
Q 62		Better Rock Co. Ltd.....		
Q 37	Castor Area	Mageobar Mining Company, Limited.....	15 & 16-31-42-17-4	1958
Q 8		Summit Lime Works Ltd.....		
Q 5	Edmonton Area	Crowsnest Area	7- 8- 5-5	1920
Q 22		Northwest Ceramics Ltd.....		
Q 21		Inland Cement Company Limited.....		
Q 21	Mountain Park Area	Edmonton.....	21-53-25-4 15 & 22-53-25-4	1911 1955
Q 21		Inland Cement Company Limited.....		
Q 21	Mountain Park Area	Edmonton.....	13-30-46-23-5	1955
Q 21		Inland Cement Company Limited.....		

LIST OF QUARRIES PRODUCING DURING
The Year 1964

QUARRY NO.	OPERATOR	QUARRY OFFICE ADDRESS	QUARRY LOCATION L.S. S. T. R. M.	DATE OF OPENING
Q 64	Alberta Oyster Shell Co. Nagath Area Pakowki Area	Cardston.....	5- 3- 4-27-4	1964
Q 34	Medicine Hat Brick & Tile Company, Limited.	Medicine Hat.....	5, 6, 11 & 12-20- 8- 3-4	1957
Q 39	Medicine Hat Brick & Tile Company, Limited.	Medicine Hat.....	5-20- 8- 4-4	1959
Q 45	Medicine Hat Brick & Tile Company, Limited.	Medicine Hat.....	10 & 15- 9- 8- 4-4	1959
Q 43	Pembina Area Baroid of Canada, Ltd..... Redcliff Area	Onoway.....	Pts. Secs. 5&8, Sec. 7-56- 2-5	1959
Q 4	Perry Brick & Tile Co. Ltd.....	Redcliff.....	11 & 15- 5-13- 6-4	1913
Q 7	Medicine Hat Brick & Tile Company, Limited.	Redcliff.....	9-13- 6-4	1913
Q 14	Medicine Hat Brick & Tile Company, Limited.	Medicine Hat.....	1 & 2 31-12- 4-4	1951
Q 24	No Area Consolidated Concrete Industries Ltd.... No Area	Calgary.....	3, 4 & 5-32-21-29- 4	1956
Q 36	Northwest Ceramics Ltd.....	Edmonton.....	⁹ 5 & 6-16-66-22-4	1958
Q 65	Canadian Bechtel Limited.....	Edmonton.....	23-92-10-4	1964

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